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Models of PMO functioning in a multi-project environment

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Abstract

The article is an in-depth study of functioning of PMO models in four companies from different industries.

In the first part of the paper was made a review of available literature on problems of PMO functioning. In the second part of the paper were included descriptions of each PMO function models. Observing the described solutions you can see shift of a range of support functions into separate units, subordinated to PMO, which are program offices or project offices. These units are usually territorially decentralized and their goal is to offer program managers and project managers support functions of an operational nature. The used method of description allows to compare solutions with each other. In the last part of the study was included a comparative analysis of described solutions.

Each of the described companies has developed and implemented its own solution, with distinguishing characteristics. Each of the solutions has its own strengths and weaknesses. Analysis of individual solutions in terms of their strengths and weaknesses may be a valuable indicator for organizations that prepare the concept of activities or modify model of PMO functioning. During the analysis of the solutions another very important observation was made. Usually, after a few years of development of PMO structures, there is a crisis resulting in the "erosion" of existing structures and usually return to the solutions previously used.

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1. Introduction

In order to function effectively in an extremely volatile environment, organizations need solutions that will ensure optimal management of multiple projects. Therefore, these organizations appoint specialized organizational units whose mission is to create and deliver the solutions mentioned above. These units are referred to as the Project Management Office. The work of these units should be considered from the methodical, organizational and instrumental point of view. This article is an in-depth study of the models of PMO functioning

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in four companies from different industries. In the first part of the study, a review of the available literature concerning the problems of the PMO functioning has been made. In the second part of the study, there have been included descriptions of each of the PMO functioning models. The applied description method allows to compare the solutions with each other. In the last part of the study, a comparative analysis of concepts described herein has been included. In this section, the author of the study points to their distinctive features and identifies the strengths and weaknesses.

2. Project Management Office - literature review

The idea of PMO was concluded in the studies of Cleand and Kerzner, as well as Frame and Block. The first described the PMO as a team of individuals who are authorized to work in the generally understood interest of the project [3]. The latter, on the other hand, characterize the PMO as an organizational unit that utilizes the available resources to support the project management [5]. While drawing up the idea of the PMO, also Murphy describes it as the management of the future and not just settling the past [11]. PMO is precisely defined by Dai and Wells, who describe it as an organizational unit that provides project managers, project teams and functional managers with access to the principles, practices, methodologies, tools, and techniques that are used for efficient and effective project management [4, p. 524]. On the other hand, Hoobs and Aubry indicate that the functioning of this unit should be considered in terms of its location and position in the organizational structure and the tasks that it pursues. As they state, the most important thing, however, is the value that a PMO creates for the parent organization [7, pp. 69–82].

According to the definition of the Project Management Institute, the PMO is an organizational structure, with different functions and responsibilities, whose main task is to centralize and coordinate the management of projects in the parent organization. Studies published by PMI also provide a general outline of the role of the PMO, as the provision of such support functions, which are currently necessary to properly manage the projects implemented in the parent organization [14]. However, in their studies, the International Project Management Association defines the PMO as a part of the parent organization structures, specifically an entity, whose role is to provide support, set standards, collect, consolidate and report data.

In their study, Rad and Levin have identified two categories of functions performed by the PMO. These are project-oriented functions and organization-oriented functions [15]. However Letavec describes the main groups of functions performed by the PMO as consulting support, knowledge management, and standardizing [10]. The functions that should be implemented the PMO are approached more analytically by G. Hill. The author describes five groups of PMO functions. The first one is the best practices management. The second group of functions is the provision of infrastructure. The third group of functions is the integration of resources. The fourth group of the PMO functions, is, according to Hill, the methodological support, which includes a help in the planning of the project, conducting audits, and "rescuing" projects. The last, fifth group of functions provides development support for the parent organization's business [6].

A slightly different approach to the functions that are to be implemented by the PMO is presented by Dai and Wells. By defining these functions they indicate the useful nature of the PMO, and emphasize the need to create (by performing these functions) tangible benefits for the parent organization [4, pp. 523–532.]. Some studies directly focus on the value generated by the PMO, and the way in which it supports the achievement of business results of the parent organization [2, p. 329]. Admittedly, this is an interesting approach because it points to the need for a strong contribution of the structure that is the PMO to the achievement of strategic objectives and more generally, to the development of business.

PMO functions are characterized the most extensively by Pelleginelli and Garagena, treating it as a generally understood change agent functioning in the parent organization. They point to the fact that the PMO creates the value in implementing important functions, which include the preparation of appropriate organizational environment, data collection, aggregation and reporting, development of managers and project teams, effective knowledge resources management [13, p. 649–656]. It should also be noted that the available literature contains very precise statements of the functions that the PMO should implement [1, p. 412].

A thorough analysis of the literature allows, in a general way, to extract and characterize the following three models of the functioning of the PMO. The first is the model that focuses on direct support for the projects implemented in the organization. Thus functioning PMO is developing such functions, systems, methods, and tools that allow to effectively support the implementation of individual projects or programs, implemented in the parent organization. Second is the model of the PMO functioning as a center of knowledge transfer [16, pp. 489-492]. The PMO operating in this model is more focused on consulting and education - training activities. The scope of operation of such a PMO is broader and it covers all, or part of the parent organization. The last, third model, is the organizational PMO. In this model, the PMO activity is focused less on issues of methodology and tools, and more on supporting the business development of the parent organization [9]. In the literature one can also find a slightly different classification of models of the functioning of the PMO, the criterion of which is the scope of support implemented in the parent organization (one, several, or many projects, programs, portfolios or the entire organization). Analysis of the available sources only indicates the existence of a strong relationship between the adopted model of the functioning of the PMO and the place that it occupies in the organizational structure [17, pp.172–188]. It seems that the approach within which the adopted model of functioning determines the position of the PMO in the hierarchy of the parent organization is the most appropriate. A situation, in which the place of the PMO in the hierarchy determines the PMO functioning model, may also be considered.

3. Models of PMO functioning - case studies

The first described company is an organization that provides solutions for the broadly defined e-commerce. In the analyzed company within the framework of the PMO are two independent units. The first of these is a PSO (Project Support Office), whose task is to manage the flow of ideas, initiatives and converting them into projects. The second is the "classic" PMO (Project Management Office), the task of which is to support the implementation of projects, arranged within the frameworks of programs and portfolios [12, p. 217].

Table 1. The idea of the functioning of the PMO structures in an IT company

	<i>The role played in the organization</i>	<i>Implemented functions</i>
PSO	Management of the stream of ideas, initiatives and converting them into projects	Acquisition and development of ideas in the business development division The development and shaping of the portfolio of initiatives Conversion of initiatives into projects
PMO	Support for projects arranged within the framework of the programs, Support for portfolio management	Methodological and administrative support for portfolio management (including individual projects and programs) Development of tools supporting the management of the portfolio Conducting trainings and education (through the Project Competence Center) Methodical support for affiliates

Functions implemented by the PSO include the acquisition of ideas, shaping the portfolio of initiatives and substantial supervision of transforming them into projects. The PSO also creates and applies methodological standards for acquisition, evaluation and selection of initiatives and their conversion into projects. The scope of functions offered by the unit, which is the PMO, includes assistance in managing the portfolio, which includes both whole programs, as well as individual IT projects (see Table 1).

The activities of the second analyzed company focus on implementing complex projects in the broadly defined outsourcing services. Structures of the PMO functioning in this company support portfolio management that are provided to corporate customers. Program management, under which from a few to several tens of projects are carried out is supported by the structure, which is the PMO of Program. Its task is the broadly defined support for program managers, as well as those in charge of individual projects.

Table 2. The idea of the functioning of the PMO in a service industry company

	<i>The role played in the organization</i>	<i>Implemented functions</i>
PMO	Support for management of portfolios, which are implemented for corporate clients	Human resource management Creating the methodological and organizational standards Management of the available knowledge resources and the databases of best practices Determining the terms of quality standards and improvement of operational activity Crisis management
PMO of the Program	Support for programs management and major projects that are implemented for each client	Methodological and administrative support for a program or a major project Starting a central repository of information Management of the scope of the program Managing change in the program Program product management Monitoring of the program budget Status monitoring and reporting Risk management Closing the program

However, the task of the proper PMO is to create a suitable environment for the smooth functioning of the various PMO of the Programs through the creation of methodological standards, human resource management and knowledge transfer. It can therefore be concluded that the PMO functioning in the company works more as a supplier of necessary methodological - organizational solutions. On the other hand, the PMO of the programs are subsidiaries, they have the characteristics of distributed PMO agencies (see Table 2).

The third described company implements complex technical projects related to the electricity transmission infrastructure. These are the projects implemented in the long term, involving a considerable amount of resources with large budgets. To ensure consistency with the adopted strategy, the initiated projects are combined into programs.

Table 3. The idea of the functioning of the PMO in an engineering industry enterprise

	<i>The role played in the organization</i>	<i>Implemented functions</i>
PMO (Strategic Programs Office)	The selection of projects in terms of their connection with the strategic objectives, Methodical, organizational and administrative support for the implementation of programs of a strategic nature	Creating the methodological standards Substantial and administrative support for programs of a strategic nature Management of communication with stakeholders Management of the central repository of information Support for the reporting process
Operational Programs Office	Methodical, organizational and administrative support for the implementation of programs of an operational nature	Methodological support for the operational program Administrative and organizational support for the operational program Information management and reporting Management of project documentation

In the described enterprise, the organizational PMO function is performed by one of the departments, which is responsible for the implementation of the strategy. For programs of a strategic nature the department also acts as the Program Office. In addition, it implements the traditional functions of the PMO, which are the creation of methodological standards in the area of project management and substantial and administrative support for programs of a strategic nature. This certain duality of functions, enriched with aspects of the responsibility for implementing the strategy, makes it a PMO more focused on the coordinating activities and the implementation of the support functions only for the strategic group of programs. The PMO operating in such a form plays more the role of a guard of methodological guidelines and a unit supervising the performance of certain works, provided for by the methodology, than the structures offering the classic support services. It should be added that, for complex programs not being characterized as strategic in the individual mode, temporary structures are set up, which are the

program offices (see Table 3). The implementation of major projects is supported by project offices, taking on the burden of administrative support for project managers.

The last of the described companies represents the manufacturing industry. The PMO working in this company is of an allocation nature and a significant part of its functions relates to controlling the flow of resources between major projects, groups of projects and programs that are implemented within the portfolio. The PMO in this company also creates methodological standards, and more importantly - it manages risk at the portfolio level (both the risk of operational and financial nature).

Table 4. The idea of the functioning of the PMO in a manufacturing industry company

	<i>The role played in the organization</i>	<i>Implemented functions</i>
PMO	Providing optimal resource management and methodological and administrative support for elements of the portfolio	Supervising the use of methodological standards Determining resource requirements and controlling their allocation Managing risk under the portfolio Advisory and Consulting (in legal and technical matters)
Program Office	Methodological, organizational and administrative support for programs and groups of projects	Methodological support for the program and groups of projects Administrative and organizational support for the program and groups of projects Information management and reporting support Management of project documentation

In the described company the program implementation is supported by substantial, administrative and organizational structures, which are the programs offices (see Table 4). However, large projects implemented independently within the portfolio are supported by individuals, who are project offices. This solution is very similar to the one previously described.

3. Comparative analysis of case studies

To make a comparison of the above solutions, one should indicate their characteristics and define weak and strong points [8, pp. 121-140]. The first presented solution functions in a company in the IT industry. An extremely interesting feature of this operational model is the separation of the two independent units within the PMO. The first is the PSO, which exercises methodological supervision over the acquisition of ideas, transforming them into initiatives and conversion into projects. The second is the proper PMO, which actively supports the implementation of the transformed initiatives, projects. The application of such a model allows the company to control the major portion of the activity, which is the initiation and development of initiatives. It also creates clear selection mechanisms that allow to manage the implementation (i.e. forwarding them to the PMO, in which project managers and support services are employed) of only those projects that are the development of mature initiatives. These projects then have a stable range, and can be quickly and effectively implemented. While analyzing the solution functioning in the company operating in the IT industry one can distinguish its strengths and weaknesses. The strengths of the presented solution are:

- the PSO has developed methodological guidelines that regulate the mode of incubation and acquisition of ideas, development of initiatives and how they transform into projects,
- the PMO deals only with the implementation of the projects for which, on the level of initiative, the assumptions have been clearly and accurately substantiated. Range and other parameters of the projects initiated in this way are stable, so that their implementation can take place quickly and efficiently,
- thoughtful education of the PMO staff and subsequently also the employees of the company by the Project Competence Center, which transfers knowledge from the area of project management and creates the foundations of organizational culture, oriented towards projects,

- proper transfer of best practices within the capital group. The solutions working in the PMO located in the parent company have been tentatively applied in one of the companies, and then in other companies. The applied solutions are tailored to the needs of affiliates.

In the presented model of functioning one can also observe some weaknesses. These include the elements listed below:

- the improperly functioning PSO has caused a very long time of development of the initiative, which could have been the result of communication difficulties on the line PSO - business units,
- management of the entire structure of the PMO has firmly focused on the development of the proper PMO, as it is this unit that has been directly responsible for supporting the implementation of projects. On the other hand, the PSO, although it plays a crucial role, has begun to develop applicable standards and tools only when problems with the speed and quality of its operations have been indicated. Such disparities of methodological - instrumental nature have caused significant differences in levels of development and the quality of work of these two units,
- location of the PSO and the PMO, which form part of the structure in different divisions (business development division - PSO, information technology division PMO), which has created problems of communicational and coordinative nature, and required a precise definition of the rules of cooperation between these two entities,

Another described solution was the PMO functioning in the company operating in the service industry. While analyzing this case one may see a clear division of functions carried out by the PMO. Some of them, whose goal was to support the portfolio management, are implemented by the PMO. In addition, the PMO is responsible for key processes, which are human resource management, the creation of methodological standards, encouraging the transfer of knowledge, improving PMO and PMO of Program operations as well as crisis management. The remainder of the functions that have a more operational nature are implemented by the specially set up units, which are the PMO of the Program. They act as a decentralized agents of the organizational PMO. Therefore, the PMO supports the achievement of results of the portfolio, and the Program PMO supports the implementation of programs at the operational level by starting and supervising a number of necessary actions.

An extremely interesting aspect of this solution is the use of a process approach, both in the operation of the PMO, as well as in the work of the Program PMO. Using this approach makes it possible to identify and describe the processes that should be run and implemented to provide appropriate support functions for the portfolio and programs (as well as the projects implemented under them). The strengths of the solution, functioning in the described company operating in the service industry, include the following elements:

- a full catalog of functions has been divided in a precise manner, into those which are implemented on the tactical level by the PMO, responsible for supporting the portfolio and business development as well as those at the operational level, which are implemented by the PMO of the Program, responsible for the support of individual programs,
- important functions, which are human resource management, the creation of standards, knowledge management, improving operations and crisis management are the responsibility of the organizational PMO, and create methodological and organizational frameworks for the functioning of the various PMO of the Programs,
- principles of PMO programs operation (including the list and sequence of the processes run by the PMO Program and their results) have been stored in a special manual; it also includes a precise guidance on the roles and functioning of the PMO Program services functioning,
- in this solution, the PMO performs systematic supervision of running each PMO of the Program (monitoring their status) and systematically monitors the quality of the processes carried out by the PMO of the Program (also through internal audits).
- joint training of the program manager, project managers, PMO staff and services of the PMO of the Program. In the first case, the transfer of knowledge regarding the existing methodological standards is carried out, in the latter case, an interchangeability of roles within the services of the PMO and the PMO of the Program has been provided.

As in the previous case one can observe some weaknesses of the described solution. The weaknesses of the functioning model of the PMO in the company operating in the service industry are located in the following elements:

- separation of functions to those carried out by the PMO and the PMO of the Program may give rise to competence problems and needs a clarification of responsibilities and powers under these two structures,
- much of the functionality is implemented by the PMO of the Program, the activities of which are only supervised by the PMO. Such a solution requires significant skills and rich experience from those in charge of the PMO of the Program and the team functioning within it,
- the PMO is not very actively involved in educational activities aimed at creating the right (project-oriented) organizational culture. Educational activities are carried out only where necessary (program manager and project managers and services of the PMO of the Program training when the unit is started),
- The mode to support large projects under the portfolio has not been precisely defined by the PMO. It seems that the technically complex and organizational projects should receive a higher level of support than the less complex ones.

Another described solution is the PMO functioning in the enterprise from the engineering industry. A characteristic feature of this solution is the strong orientation of the PMO to support the implementation of the strategy. In addition, the PMO, which operates within the described enterprise from the engineering industry is characterized by a duality of the implemented functions. On the one hand it fulfills the role of a classical PMO, implementing important functions, which include classification and grouping of projects, the creation of methodological standards, management, communication and reporting support. On the other hand, the PMO performs operational functions, acting as a program office for the programs of strategic importance. However, in order to support programs that are not essential in strategic terms, separate support structures are established, which are the program offices. For large, technically and organizationally complex projects separate support structures may be established, which are the project offices. Analyzing the functioning model of the PMO, which was implemented in the company, reveals the following strengths of the applied solution:

- the PMO, by initiating projects, defines their relationship with the strategy, so that they are thoughtfully sorted and grouped into programs of strategic and an operational nature. For programs of strategic nature, the PMO has developed other rules for implementation and they have a privileged access to resources,
- the PMO services are used effectively, because they play the role of the program office for strategic programs, so there is no need to establish separate structures,
- the organizational structure of the project and the program and the roles of participants in the program are clearly set out, which ensures proper implementation of their functions,
- precisely regulated rules of the establishment and functioning of the PMO, operating programs offices and project offices, allowing for smooth cooperation between all these structures.

On the other hand, the weaknesses of the solution, functioning in the engineering industry enterprise, appear in the following elements:

- the duality of the implemented functions causes the PMO not to focus on the activity, which from the point of view of development seems to be more important. A part of the PMO resources is involved in the implementation of operational functions and is excluded from the development works,
- a large number of active structures (which is the PMO, the PMO as a strategic program office, the offices of the operational programs, project offices) causes a high risk of conflict of competences and conflicts between the persons in charge of these units,
- the PMO concentrates insufficiently on the educational activity. The result is that it acts more as a unit forcing certain behavior, and not as a unit that causes appropriate behavior through education and training.

The last described solution is the PMO functioning in the enterprise from the manufacturing industry. A characteristic feature of the presented solution is the focus of this unit on the allocative functions. It should be noted that it is the possession of the PMO that allows the company to create significant synergies within the portfolio through effective management of property as well as human resources. The strengths of the model of the PMO functioning in the company from the manufacturing industry include:

- achieving high operational efficiency through the development of PMO allocative functions. This model of PMO functioning allows the company to properly manage its resources, by controlling their flow within the elements of the portfolio,
- implementation of risk management functions at the portfolio level by the PMO, which allows for comprehensive performance of activities of a preventive and reactive nature within all elements of the portfolio. PMO functions regarding risk management are specialized and relate to both the operational and financial risk,
- appointment of decentralized PMO structures, which include program offices and project offices. This solution enables to offer beneficiaries more customized support functions (such as advising on technical and legal matters).

Of course the described solution also has some weaknesses, which include:

- focusing too much on the allocative functions of the PMO, at the expense of other key functions,
- lack of educational functions that would enable the long-term creation of an organizational culture, oriented on projects,
- a very narrow range of function-oriented consulting and advisory services, in principle limited to technical and legal aspects,
- features that are not extensive enough, associated with the establishment of methodological standards. In fact, the activity of the PMO relates only to the supervision of the application of existing standards, but there are no features that would allow to develop the standards.

5. Conclusion

To sum up the above issues, it must be noted that each of the described enterprises has developed and applied its own solution, with their distinctive characteristics. Each of the solutions has its own strengths and weaknesses. Analysis of the various solutions, their strengths and some weaknesses can be a valuable clue to organizations that prepare or modify the action concept model of PMO. Observing the case studies described in this study, one can notice pushing a certain spectrum of support functions into separate subordinate units, which are the program offices or project offices. These units are usually territorially decentralized, and their mission is to offer support functions of an operational nature to the heads of programs and project managers (methodological, organizational, and administrative support). The adoption of such a solution makes the program and project offices work "closer" to the beneficiaries who benefit from the support, and the organizational Project Management Office performs the remaining key features that are meant to create significant benefits for the parent organization.

During the analysis of the solutions, yet another extremely important observation has been made. Typically, after a few years of development of the PMO structures, there is a crisis, resulting in the "erosion" of existing structures and usually a return to the previously used solutions. This phenomenon seems to be caused by achieving at any stage of the Project Management Office development optimum efficiency, understood as the scope of functions offered to support the expenses which are incurred for the functioning of this organizational unit. This observation does not change the fact that the usefulness of the PMO to the parent organization seems undeniable.

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